



NOAA FISHERIES
NATIONAL MARINE FISHERIES SERVICE



Authorizations and Permits for Protected Species (APPS)

File #: 1386-8A

Title: Statewide (WA) monitoring to investigate the

Applicant Information

Affiliation: Washington Department of Ecology

City,State,Zip: WA

Project Information

File Number: 1386-8A

Application Status: Application Complete - Issued

Project Title: Statewide (WA) monitoring to investigate the occurrence and concentrations of toxic contaminants in fish tissue.

Project Status: New

Previous Federal or 1386-7A

State Permit:

Permit Requested: • ESA Section 10(a)(1)(A) permit (Pacific fish/invertebrate research)

Where will activities Washington (including Columbia River and offshore waters)
occur?

State department of fish N/A
and game/wildlife:

Research Timeframe: Start: 07/20/2016 End: 12/31/2016

Sampling Ecology has been conducting research on toxic contaminants in freshwater fish since the 1980's. These research projects have varied time scales: some are one-time efforts taking

Season/Project Duration: place in one season while others recur annually for decades. The time of field sampling predominantly takes place in the fall, yet may vary throughout the year.

Abstract:

The Washington Department of Ecology conducts various research projects to characterize toxic contaminants in resident freshwater fish across Washington. These efforts help meet various federal (e.g Clean Water Act) and state goals. Projects are done on varied time scales: some are one-time efforts in one season while others recur annually for decades. Locations of research may change each year depending on project-specific goals.

Research efforts target freshwater resident species. Listed species would benefit from actions to control, reduce, and remove toxic contaminants from Washington's waters. Other benefits are information about water quality and potential impacts to juveniles of listed species.

Ecology collects target species (non-anadromous freshwater fish) using electrofishing, angling, and netting. Samples or measurements of listed species are not made because they are not subjects of our research. Ecology does not intend to "take" any ESA-listed species, yet our research activities may result in "take" such as observe/harass and unintentional mortality. If ESA-listed species are captured inadvertently, they would be released after receiving some recovery measures as needed (e.g. holding the fish in an aerated live well).

All ESA-listed anadromous fish species (below) could potentially be affected by Ecology's research efforts:

1. Lower Columbia River Chinook Salmon.
2. Puget Sound Chinook Salmon.
3. Snake River Fall-run Chinook Salmon.
4. Snake River Spring/Summer-run Chinook Salmon.
5. Upper Columbia River Spring-run Chinook Salmon.
6. Columbia River Chum Salmon.
7. Hood Canal Summer-run Chum Salmon.
8. Lower Columbia River Coho Salmon.
9. Ozette Lake Sockeye Salmon.
10. Lower Columbia River Steelhead.
11. Middle Columbia River Steelhead.
12. Puget Sound Steelhead.
13. Snake River Basin Steelhead.
14. Upper Columbia River Steelhead.

Project Description

Purpose: For many areas of Washington, information is lacking about the levels of toxic contamination in the environment. The Department of Ecology conducts various monitoring efforts to address this lack of information.

The purpose of the research is to investigate the occurrence and concentrations of toxic contaminants in non-anadromous freshwater fish tissue, sediment, and water from sites throughout Washington.

Ecology conducts these efforts in order to meet federal and state goals. The federal Clean Water Act requires that all waters in the state be assessed for pollution and improvements in water quality from implementing Water Quality Improvement Projects (part of the federal TMDL process – Total Maximum Daily Load). State programs such as legislation to address Persistent, Bioaccumulative, and Toxic chemicals (PBTs) in the environment will be supported by research efforts to characterize certain chemicals in the environment and track changes over time. Research efforts also support the State of Washington's Department of Health by providing data for assessing the health risks of eating contaminated fish.

Past monitoring efforts in Washington State have detected toxic contaminants in surface water, sediment, and aquatic animal tissues. In many cases, levels of contaminants have been high enough to threaten the health of humans and wildlife. The accumulation of these chemicals can cause a variety of health effects on humans and wildlife such as reproductive abnormalities, neurological problems, and behavioral changes. Details about these monitoring efforts can be found at www.ecy.wa.gov/programs/eap/toxics/index.html.

Benefits to listed species are likely more indirect than direct. For example, basic knowledge will be gained about the levels of toxic contaminants present in fish which share the same habitat and range of the listed species. Other potential benefits of this monitoring program to listed species may be realized through pollution control actions that could occur as a result of this program's findings. Pollution control actions might take the form of habitat improvement and/or the reduction or removal of sources of toxic contaminants.

Description: Ecology conducts various research projects to characterize toxic contaminants in resident freshwater fish across Washington. These efforts help meet various federal and state goals. These research projects are described in Quality Assurance Project Plans which include background information, project goals, timeframes, locations, methods, staffing, data management and analysis, and reporting.

Study designs vary among projects yet are usually similar in efforts for collecting freshwater fish. Study designs often have a goal to collect 5-15 individual fish per species at each sampling location. The tissues from three to five fish of the same species are used to form a single composite sample which is then submitted for laboratory analyses. One to four species of fish are typically targeted at each sample location. The target size of fish is that of an adult of harvestable size by recreational or subsistence anglers.

A list of specific sampling sites is developed each year in the spring and is used to obtain other research permits and notify permit managers (e.g. NMFS and USFWS) of plans for the coming season. Sampling locations are determined from project-specific goals. For watershed-specific studies, multiple sites along the mainstem river and tributaries are chosen. For statewide or regional studies, multiple sites are often selected which to include environments of interest, such as lakes or rivers.

This permit application is for all waters of Washington.

Projects are done on varied time scales: some are one-time efforts in one season while others recur annually for decades. Locations of research may change each year depending on project-specific goals. The time of sampling usually is usually the late summer and fall; yet may vary throughout the year depending upon project-specific objectives. The frequency of sampling at any one site is usually low – most often a one-time field effort is needed to collect samples.

The time period for this permit is for five years, from June 30, 2012 until December 31, 2016

Resident freshwater fish are captured by the use of nets, electrofishing, and angling. Details for these methods are described in the Methods section below. Ecology does not intend to "take" any ESA-listed species, yet our research activities may result in "take" such as observe/harass and unintentional mortality. If ESA-listed species are captured inadvertently, they would be released after receiving recovery measures as needed (e.g. holding the fish in an aerated live well).

No tags or drugs will be used during Ecology's' research efforts involving fish.

Supplemental Information

Status of Species: The study sites are throughout the state. We have no new information to provide.

Methods:

Fish will be captured by the use of electrofishing (boat and backpack) nets, and/or angling. Target species include non-anadromous freshwater fish of a size typically designated for harvesting by recreational anglers.

Electrofishing uses a Smith-Root 16' electrofishing boat with an isolated cathode array or a Smith-Root LR-24 backpack electrofisher. The electrofishing strategy is:

1. Reconnoiter area for presence of listed species.
2. Determine water temperature, conductivity, and clarity
3. Prepare unit with lowest settings for pulse frequency, voltage, and current.
4. Operate and adjust unit in successive efforts to optimize settings for target species.
5. Make single pass through the area of interest. Make second pass if needed: 30 - 90 minutes after first pass.
6. Record characteristics of the effort on field logs: water temperature, conductivity, water clarity, times of start and stop, pulse frequency, voltage range and % of range, amps, and time that electric field was on.

Nets are of varied lengths, depths, and mesh size. Gill nets: 200' long by 6'-8' deep; 3-5 panels of varied mesh sizes ranging from $\frac{3}{4}$ " - $2\frac{1}{2}$ ". Beach seines: 40' – 100' long; 6' 8' deep; mesh size of $\frac{1}{4}$ " - 1". Smaller block nets for streams: $\frac{1}{2}$ " mesh, 6'-9' long by 6' deep. A fyke net may be used in lakes: a trap-type with mesh size of $\frac{1}{2}$ "; a single leader net (3'x40') directs fish to series of funneled traps with 3.5' diameter hoops. Nets are checked within 6-hours of deployment.

Angling follows WDFW regulations and research permit requirements. Various gear types may be used and depends on species and location. Barbed or barbless hooks may be used where allowed. Barbless hooks are used when required by other permitting authorities (e.g. USFWS, NPS).

Target species are retained and non-target species are released. Non-target fish may be held in an aerated live well to aid their recovery before release.

Lethal Take:

Not Applicable

Anticipated Effects on Animals:

Listed species, if inadvertently captured, will be released immediately or held temporarily in an aerated live well to aid recovery. Mortality of listed species would be unintentional and a consequence of capture and handling by electrofishing, netting, and line fishing. We expect adults to be more at risk than juveniles because electrofishing and netting activities will target adults of non-listed species. Net mesh size (greater than 1.0 inches mesh) would allow juveniles to pass through while electrofishing settings will have greater effect on adults due to their larger surface area. We estimate mortality of listed species/ESUs to be up to one percent of the number encountered.

Measures to Minimize Effects:

Fish collection efforts will occur when adults are expected to be absent or present in low numbers from the waterbody being sampled. Researchers and crews will follow the 2000 NMFS Electrofishing Guidelines. Prior to any electrofishing effort, the area will be reconnoitered to determine the presence of listed species. If listed species are observed in the area, electrofishing will not be pursued and other options considered, which may include abandoning collections at that site. Where electrofishing is pursued, we begin with straight DC current at low voltage. Should these settings be ineffective for attracting fish, pulsed DC at low frequencies may be used, and voltages increased to the minimum needed to capture adult fish of target species.

When using nets, mesh sizes should be large enough ($> 1"$) to allow juveniles to pass through unharmed. Gill net soak time will be limited to 6-hours to allow release of unintentional adult listed species.

More details are in the previous Methods section.

Resources Needed to Accomplish Objectives: Ecology has committed staff, facilities, and equipment to varied monitoring efforts such as testing for toxic contaminants in resident freshwater fish. The Environmental Assessment Program conducts most of this type of research using about 16 researchers and support staff in the Toxics Studies Unit

Ecology's Olympia facility has lab space for cleaning gear, processing samples, and storage of samples, containers, and chemicals. Nearby is the EA Program's Operations Center which houses lab spaces, fabrication shop, and storage for some dozen field vehicles, 5 boats, and other equipment

We conduct research with formal and informal cooperation with other federal, tribal, state, and local government entities (e.g. EPA, USFWS, Confederated Tribes of the Colville Reservation).

Disposition of Tissues: ESA-listed species are not targeted for collection.

Tissue from target species is processed and sent to labs for varied chemical analyses. Archive samples are retained for 6-18 months after collection.

Public Availability of Product/Publications: Publications and data for projects conducted under this permit are available on the internet. Ecology's home page has a tab for a "Publications and Forms" page, which has search functions to find publications and data: <http://www.ecy.wa.gov/ecyhome.html>.

The website for the WSTMP contains background information and more direct links to publications: <http://www.ecy.wa.gov/programs/eap/toxics/wstmp.htm>.

Federal Information

No Federal comments or authorizations.

Location/Take Information

Freshwater Location

Research Area: Pacific Ocean State: WA Sub Basin (4th Field HUC): N/A Stream Name: Streams and tributaries throughout the state of Washington

Location Description: Streams and tributaries throughout the state of Washington.

Take Information

Line	Ver	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Indirect Mort	Take Action	Observe /Collect Method	Procedure	Run	Transport Record	Begin Date	End Date
1		Salmon, Chinook	Puget Sound (NMFS Threatened)	Natural	Adult	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016

2	Salmon, Chinook	Puget Sound (NMFS Threatened)	Natural	Juvenile	Male and Female	20	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
3	Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Spring	N/A	7/20/2016	12/31/2016
4	Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Spring	N/A	7/20/2016	12/31/2016
5	Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Spring/Summer	N/A	7/20/2016	12/31/2016
6	Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Spring/Summer	N/A	7/20/2016	12/31/2016
7	Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Fall	N/A	7/20/2016	12/31/2016
8	Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Fall	N/A	7/20/2016	12/31/2016
9	Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
10	Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
11	Salmon, chum	Hood Canal summer-run (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
12	Salmon, chum	Hood Canal summer-run (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
13	Salmon, chum	Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016

14		Salmon, chum	Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
15		Salmon, coho	Lower Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
16		Salmon, coho	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
17		Salmon, sockeye	Ozette Lake (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		N/A	N/A	7/20/2016	12/31/2016
18		Salmon, sockeye	Ozette Lake (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		N/A	N/A	7/20/2016	12/31/2016
19		Steelhead	Upper Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
20		Steelhead	Upper Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
21		Steelhead	Middle Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
22		Steelhead	Middle Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
23		Steelhead	Snake River Basin (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
24		Steelhead	Snake River Basin (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
25		Steelhead	Lower Columbia River (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Winter	N/A	7/20/2016	12/31/2016

26		Steelhead	Lower Columbia River (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Winter	N/A	7/20/2016	12/31/2016
27		Steelhead	Puget Sound (NMFS Threatened)	Natural	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
28		Steelhead	Puget Sound (NMFS Threatened)	Natural	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
29		Salmon, Chinook	Puget Sound (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
30		Salmon, Chinook	Puget Sound (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	20	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
31		Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Spring	N/A	7/20/2016	12/31/2016
32		Salmon, Chinook	Upper Columbia River spring-run (NMFS Endangered)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Spring	N/A	7/20/2016	12/31/2016
33		Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Spring/Summer	N/A	7/20/2016	12/31/2016
34		Salmon, Chinook	Snake River spring/summer-run (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Spring/Summer	N/A	7/20/2016	12/31/2016
35		Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Fall	N/A	7/20/2016	12/31/2016

36		Salmon, Chinook	Snake River fall-run (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Fall	N/A	7/20/2016	12/31/2016
37		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
38		Salmon, Chinook	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
39		Salmon, coho	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
40		Salmon, coho	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	20	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
41		Salmon, sockeye	Ozette Lake (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		N/A	N/A	7/20/2016	12/31/2016
42		Salmon, sockeye	Ozette Lake (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		N/A	N/A	7/20/2016	12/31/2016
43		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
44		Steelhead	Upper Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016

45	Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
46	Steelhead	Middle Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
47	Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
48	Steelhead	Snake River Basin (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Summer	N/A	7/20/2016	12/31/2016
49	Steelhead	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Winter	N/A	7/20/2016	12/31/2016
50	Steelhead	Lower Columbia River (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Winter	N/A	7/20/2016	12/31/2016
51	Steelhead	Puget Sound (NMFS Threatened)	Listed Hatchery Adipose Clip	Adult	Male and Female	5	0	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016
52	Steelhead	Puget Sound (NMFS Threatened)	Listed Hatchery Adipose Clip	Juvenile	Male and Female	10	1	Capture/Handle/Release Fish	Electrofishing, Boat		Mixed	N/A	7/20/2016	12/31/2016

NEPA Checklist

1) If your activities will involve equipment (e.g., scientific instruments) or techniques that are new, untested, or otherwise have unknown or uncertain impacts on the biological or physical environment , please discuss the degree to which they are likely to be adopted by others for similar activities or applied more broadly.

Traditional methods will be used during sampling activities.

2) If your activities involve collecting, handling, or transporting potentially infectious agents or pathogens (e.g., biological specimens such as live animals or blood), or using or transporting hazardous substances (e.g., toxic chemicals), provide a description of the protocols you will use to ensure public health and human safety are not adversely affected, such as by spread of zoonotic diseases or contamination of food or water supplies.

Equipment used for collecting fish is cleaned prior to use at other locations. Cleaning procedures vary and may include cold or hot water and soap wash/rinse; also application of bleach solution to live wells and other surfaces that may harbor potentially harmful agents.

3) Describe the physical characteristics of your project location, including whether you will be working in or near unique geographic areas such as state or National Marine Sanctuaries, Marine Protected Areas, Parks or Wilderness Areas, Wildlife Refuges, Wild and Scenic Rivers, designated Critical Habitat for endangered or threatened species, Essential Fish Habitat, etc. Discuss how your activities could impact the physical environment, such as by direct alteration of substrate during use of bottom trawls, setting nets, anchoring vessels or buoys, erecting blinds or other structures, or ingress and egress of researchers, and measures you will take to minimize these impacts.

Sampling sites for the project include freshwater streams and lakes throughout Washington. When operating in special or protected areas, additional precautions may be taken as requested by the manager of the special area.

Our normal operating procedures minimize disturbance to the extent possible:

Operations by boat or on foot would have minimal impact at the sample sites. Minor and temporary disturbance of substrate and water clarity may occur as people or equipment contact the substrate such as when stream-walking, boat-launching, or operating boat in shallow water. Boats are well maintained and absorbant pads are on-board to handle potential oil spills. Anchoring is rarely needed, so disturbance from anchors appears negligible.

When using nets, the areas of set are reconnoitered (using maps, charts, depthsounder) prior to setting nets to ensure snag-free retrieval. Use of nets includes using multiple location bouys for retrieval.

4) Briefly describe important scientific, cultural, or historic resources (e.g., archeological resources, animals used for subsistence, sites listed in or eligible for listing in the National Register of Historic Places) in your project area and discuss measures you will take to ensure your work does not cause loss or destruction of such resources. If your activity will target marine mammals in Alaska or Washington, discuss measures you will take to ensure your project does not adversely affect the availability (e.g., distribution, abundance) or suitability (e.g., food safety) of these animals for subsistence uses.

We notify local jurisdictions and tribes about our planned sampling activities which help us identify sensitive issues to be aware of prior to sampling. We may also invite representatives from other jurisdictions to accompany us during actual sampling effort to help with local knowledge and concerns.

5) Discuss whether your project involves activities known or suspected of introducing or spreading invasive species, intentionally or not, (e.g., transporting animals or tissues, discharging ballast water, use of equipment at multiple sites). Describe measures you would take to prevent the possible introduction or spread of non-indigenous or invasive species, including plants, animals, microbes, or other biological agents.

Some of our activities do have the potential to contact, harbor, and spread invasive species, particularly boat operations. We follow a Standard Operating Procedures developed by Ecology to minimize the spread of invasive species. The SOPs are available at: <http://www.ecy.wa.gov/programs/eap/InvasiveSpecies/AIS-PublicVersion.html>

Project Contacts

Responsible Party: Carol Smith

Primary Contact: Keith Seiders

Principal Investigator: Keith Seiders

Other Personnel:

Name	Role(s)
Paul Anderson	Co-Investigator
Andy Bookter	Co-Investigator
Christopher Clinton	Co-Investigator
Randy Coots	Co-Investigator
Brandee Era-Miller	Co-Investigator
Melissa McCall	Co-Investigator
Callie A. Meredith	Co-Investigator
Dale Norton	Co-Investigator
Patti Sandvik	Co-Investigator
Jennifer Wolfe	Co-Investigator
Siana Wong	Co-Investigator

Attachments

Certification of Identity - P20628T11Authenticationpage-applicationforamendment07-11-16.pdf (Added Jul 11, 2016)

Contact - Andy Bookter C16575T5AndyBookterCVforNMFSpermitapp2016-0711.doc (Added Jul 11, 2016)

Contact - Brandee Era-Miller C9986T5BrandeeEra-MillerCVforNMFSpermitapp2016-0328.doc (Added Mar 28, 2016)

Contact - Callie A. Meredith C12915T5CallieMathieuCVforNMFSpermitapp2016-0328.doc (Added Mar 28, 2016)

Contact - Carol Smith C19916T5CarolSmithCVforNMFSpermitapp2016-0328.doc (Added Jul 11, 2016)

Contact - Christopher Clinton C19610T5ChristopherClintonCVforNMFSpermitapp2016-0328.doc (Added Mar 28, 2016)

Contact - Dale Norton C9982T5DaleNortonCVforNMFSpermitapp2016-0328.doc (Added Jul 11, 2016)

Contact - Dale Norton C9982T5DaleNortonCVforNMFSpermitapp2016-03281.doc (Added Jul 11, 2016)

Contact - Jennifer Wolfe C13685T5J Hall resume.doc (Added Dec 9, 2009)

Contact - Jennifer Wolfe C13685T5Jenny Wolfe Qualifications.docx (Added Feb 24, 2015)

Contact - Jennifer Wolfe C13685T5JennyWolfeCVforNMFSpermitapp2016-0328.doc (Added Mar 28, 2016)

Contact - Jennifer Wolfe C13685T5JennyWolfeCVforNMFSpermitapp2016-03281.doc (Added Mar 28, 2016)

Contact - Keith Seiders C8240T5KeithSeidersCVforNMFSpermitapp2016-0328.doc (Added Mar 28, 2016)

Contact - Melissa McCall C19919T5MelissaMcCallCVforNMFSpermitapp2016-0711.doc (Added Jul 11, 2016)

Contact - Patti Sandvik C9980T5PattiSandvikCVforNMFSpermitapp2016-0328.doc (Added Mar 28, 2016)

Contact - Paul Anderson C9984T5PaulAndersonCVforNMFSpermitapp2016-0328.doc (Added Mar 28, 2016)

Contact - Randy Coots C9983T5RandyCootsCVforNMFSpermitapp2016-0328.doc (Added Mar 28, 2016)

Contact - Siana Wong C19920T5SianaWongCVforNMFSpermitapp2016-0711.doc (Added Jul 11, 2016)

Project Description - P1386-7A_i18814T14Issued.pdf (Added Jul 11, 2016)

Project Description - P4688T12010 Site List for TSU.xls (Added Jul 11, 2016)

Status

Application Status: Application Complete

Date Submitted: July 11, 2016

Date Completed: July 11, 2016

Last Date Archived: July 20, 2016

- ESA Section 10(a)(1)(A) permit (Pacific fish/invertebrate research)

Current Status: Issued Status Date: July 20, 2016

Section 7 Consultation: Formal Consultation

NEPA Analysis: Categorical Exclusion

Expire Date: December 31, 2016

Analyst Information:

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|----|-----------------|--|
| 1) | Mitchell Dennis | Phone: (360)753-9580
Email: mitch.dennis@noaa.gov |
| 2) | Gary Rule | Phone: (503)230-5424
Email: gary.rule@noaa.gov |
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Reports

Report Required

Nbr	Report Type	Report Period		Date Due	Status	Date Received
		Start Date	End Date			
1	Annual	07/20/2016	12/31/2016	01/31/2017	N/A	